

WHAT IS CLAIMED IS:

1. A method for increasing P2P communication system capacity, performed by a network system, comprising:

(a) detecting the position of active P2P UEs in P2P communication mode and the position of two UEs trying to establish P2P communication;

(b) judging whether any of the two UEs falls into the radio range of any active UE except the two UEs, according to the detected position information;

(c) allocating corresponding radio resource to the two UEs so that the two UEs can perform P2P communication, according to the judgment result.

2. The method according to claim 1, wherein said radio resource at least includes information about timeslot and channel code.

3. The method according to claim 1, wherein step (c) includes:

(c1) allocating channel code different from that of said active P2P UE to the judged UE if the judged UE falls into said radio range.

4. The method according to claim 3, further comprising:

(d) determining whether the judged UE and said active P2P UE are assigned in the same timeslot;

(e) allocating channel code different from that of said active P2P UE to the judged UE if the judged UE and said active P2P UE are assigned in the same timeslot and the judged UE falls into said radio range.

5. The method according to claim 3, wherein step (c1) includes:

setting the record flag about the position relationship between the judged UE and said active P2P UE as a predefined value, if the judged UE falls into said radio range;

5 allocating channel code different from that of said active P2P UE to the judged UE, according to the record flag of said active P2P UE.

6. The method according to claim 1, wherein said position information is obtained from the report messages of said active P2P UE and said two UEs or through GPS in step (a).

10 7. The method according to claim 5, further comprising:

allocating channel code same with said active P2P UE to the judged UE if the judged UE doesn't fall into said radio range.

8. The method according to claim 7, further comprising:

reclaiming the radio resource occupied by the P2P communication when
15 the P2P communication between said two UEs ends.

9. A network system, comprising:

a detecting unit, for detecting the position of active P2P UEs in P2P communication mode and the position of two UEs trying to establish P2P communication;

a judging unit, for judging whether any of the two UEs falls into the radio range of any active UE except the two UEs, according to the detected position information;

an allocating unit, for allocating corresponding radio resource to the two
5 UEs so that the two UEs can perform P2P communication, according to the judgment result.

10. The network system according to claim 9, wherein said radio resource at least includes information about timeslot and channel code.

11. The network system according to claim 9, wherein said allocating unit
10 allocates channel code different from that of said active P2P UE to the judged UE if the judged UE falls into said radio range.

12. The network system according to claim 11, wherein said allocating unit allocates channel code different from that of said active P2P UE to the judged UE if said judging unit determines that the judged UE and said active P2P UE are
15 assigned in the same timeslot and the judged UE falls into said radio range.

13. The network system according to claim 11, further comprising:

a marking unit, for setting the record flag about the position relationship between the judged UE and said active P2P UE as a predefined value, if the judged UE falls into said radio range;

20 wherein said allocating unit allocates channel code different from said active P2P UE to the judged UE according to the record flag of said active P2P UE.